TSIOVKIN, Yu.N.; KRENTSIS, R.P.

Low-temperature adabatic calorimeter. Trudy Ural.politekh.inst. no.14:75-80 '61. (MIRA 16:6)

(Calorimeters)

L 12480-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/HW-2
S/185/63/008/003/002/009

62

AUTHOR: Volkenshteyn, N. V., Galoshina, E. V., Turchinskaya, M. I., Fedorov, G. V. and Tsiovkin, Yu. N.

TITLE: Effect of ordering on electrical magnetic, galvanomagnetic and thermal properties of Ni$_3$Mn alloy

14 27—21

PERIODICAL: Ukrains'kyy Fizychnyy Zhurnal, v. 8, no. 3, 1963, 306-312.

TEXT: The article investigated the electrical conductivity, magnetization, Hall effect and heat capacity of alloys near the stoichiometric composition Ni$_3$Mn over a wide range of temperatures down to 1.50 K both in disordered and in states with varying degrees of long-range order. The data which were obtained show that the disordered state and the initial stages of ordering where short range order appears are very complex for Ni$_3$Mn alloy. The temperature dependence of electrical conductivity was investigated near the Curie point. Magnetization measurements were made on single crystals. The Hall emf for ordered state of this alloy as a function of induction has normal character for ferromagnetic materials. The article contains 7 figures and a 6 item bibliography.

ASSOCIATION: Institut Fiziki metallov AN SSSR (Institute of Metal Physics of the Academy of Sciences of the USSR, Sverdlovsk)

Card 1/1

VOLKENSHTEYN, N.V.; TSIOVKIN, Yu.N.

Heat capacity of alloys in the system Ni - Mn in the 13 - 300°K. temperature range. Fiz.met.i metalloved. 15 no.3:465-467 Mr '63. (MIRA 16:4)

1. Institut fiziki metallov AN SSSR.
(Nickel-manganese alloys—Thermal properties)

18.8100
18.1250

68635

S/126/60/009/02/029/033
E032/E314

AUTHORS: Volkenshteyn, N.V. and Tsiovkin, Yu.N.

TITLE: Temperature Dependence of the Specific Heat of the Alloy Ni_3Mn in an Unordered State

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 2, pp 311 - 312 (USSR)

ABSTRACT: Volkenshteyn et al (Ref 1) and Kouvel et al (Ref 2) have shown that a transition from the paramagnetic state into the ferromagnetic state takes place in the unordered alloy Ni_3Mn at about 120 °K. It is, therefore, of interest to measure the specific heat in this temperature region and to determine the character of the transition. The present authors have measured the specific heat by the method described by Khotkevich and Bagrov (Ref 5). The method is convenient in that it involves the use of specimens in the form of thin wires. In the present study, the specimens were 50 cm long and 0.15 mm in diameter. They were prepared from a large piece of the Ni-Mn alloy, cooled down from 1 000 °C. Measurements were made of the resistance of the specimens as a function of temperature

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4

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S/126/60/009/02/029/033
E032/E314

Temperature Dependence of the Specific Heat of the Alloy Ni_3Mn in an Unordered State

by heating the specimen in a lead block. The temperature was measured by a copper constantan thermocouple and the resistance by the usual potentiometer method. The specimen was placed in one arm of a Kelvin bridge and a short current pulse (5×10^{-3} sec) was passed through it. The magnitude of the current was chosen so as to ensure the heating of the specimen to the required temperature and the short duration of the pulse ensured that the process was adiabatic. During the heating process an oscillographic record was made of the resistance and the current as functions of time. The amount of heat supplied was determined by graphical integration of the power dissipated in the specimen during a known interval of time. A change in the temperature during this time was determined from the curve of the temperature dependence of the resistance. The results obtained are shown in the figure on p 331, in which Curve A shows the resistance as a

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S/126/60/009/02/029/033
E032/E314

Temperature Dependence of the Specific Heat of the Alloy Ni$_3$Mn in an Unordered State

function of temperature and Curve B shows the specific heat as a function of temperature. Curve B has a discontinuity at about 110 °K and Curve A also shows a change at about that temperature characteristic of a phase transition of the second kind. Extrapolation of the specific heat curve to room temperatures is in good agreement with Thomson's data (Ref 4). It is noted that the pulse method gives a good qualitative picture of the change in the specific heat with temperature even in the case of materials with a low temperature coefficient of resistance. There are 1 figure and 5 references, 3 of which are Soviet and 2 English.
(Note: this is an abridged translation)

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals of the Ac.Sc., USSR)

SUBMITTED: September 29, 1959

Card 3/3

80221

18.8100

S/126/60/009/04/028/033
E021/E435

AUTHORS: Volkenshteyn, N.V. and Tsiovkin, Yu.N.

TITLE: Study of the Kinetic Curves of Electrical Resistance of Ordered Alloys 18

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 4, pp 627-630 (USSR)

ABSTRACT: An attempt has been made to investigate the kinetic curve of the electrical resistance by rapid heating by means of an electric current. Samples of nickel-manganese (23.8% Mn) were used. A series of samples were heated at 520°C for three hours, then at 480°C for eight hours and 460°C for fifteen hours. Some of the samples were quenched in water from 460°C and the remainder were heated at 380°C for twenty hours and furnace cooled. The unordered state was obtained by heating a sample with an electric current in a vacuum of 10^{-3} mm mercury to 1000 to 1200°C for 10^{-2} seconds, followed by a quench to room temperature. The electrical resistance during heating was found by the impulse method (Ref 3). A square topped pulse of 10^{-2} sec duration was fed to the specimen which formed one of the arms of a Thomson bridge. The

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4

80221

S/126/60/009/04/028/033
E021/E435

Study of the Kinetic Curves of Electrical Resistance of Ordered Alloys

relationship between the electrical resistance and the time of heating is shown in the figure on p 629. Curve 1 applies to the alloy ordered at 380°C and, up to a certain point, this curve is the same as that usually obtained for ferromagnetics. With decrease in ordering (Curve 2 ordered at 460°C), the maximum in the transition region is smoother. The curve for the unordered sample (Curve 3), quenched from 1000 to 1200°C, is quite different from the other two. The impulse method makes it possible to distinguish between the order-disorder transition and the point of ferromagnetic transformation. There are 1 figure and 7 references, 3 of which are Soviet, 2 English, 1 Japanese and 1 German.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: November 9, 1959

Card 2/2

4

SOV/126- - -7-5-8/25

AUTHORS: Fakidov, I.G. and ~~Tsiovkin, Yu.N.~~

TITLE: Magnetic Properties of the Compound Mn_3Ge_2 (Magnitnyye svoystva soyedineniya Mn_3Ge_2)

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 5, pp 685-688 (USSR)

ABSTRACT: The authors studied magnetic properties of Mn--Ge alloys containing from 40 to 95 atomic % of Ge. The properties studied were: the temperature dependence of the magnetic moment between 77 and 750 °K and the dependence of the magnetic moment on the alloy composition and the magnetic field intensity. Purity of the original materials and the method of preparation of alloys were described earlier (Ref 4). Measurements were carried out on a magnetic balance using Faraday's method. Some of the results obtained are shown in Figs 1-4. Fig 1 gives the dependence of magnetic susceptibility of Mn--Ge alloys on composition at 420 °C. Fig 2 shows the temperature dependence of susceptibility of the ferromagnetic phase Mn_3Ge_2 in alloys containing 60, 70, 80 and 95 atomic % of germanium. The temperature and the magnetic field dependences of the magnetic moment of

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Magnetic Properties of the Compound Mn_3Ge_2 SOV/126---7-5-8/25

Mn_3Ge_2 are given in Figs 3 and 4 respectively. From their results the authors draw the following conclusions: (1) In Mn—Ge alloys containing from 40 to 95 atomic % of Ge a ferromagnetic phase of Mn_3Ge_2 composition is present. This phase exists between 113 and 283 $^{\circ}$K. At 113 $^{\circ}$K a phase transition of the first kind occurs, while 283 $^{\circ}$K is the ferromagnetic Curie point. The paramagnetic Curie point of Mn_3Ge_2 lies at 300 $^{\circ}$K. The magnetic moment of the manganese atom in the compound Mn_3Ge_2 is 2.5 μ_B (found from paramagnetic measurements). (2) Values of the electrical resistivity ($\sim 10^{-3}$ ohm.cm)
Card 2/2 and the magnetic moment (2.5 μ_B) indicate that the metallic bond predominates in the compound Mn_3Ge_2. There are 4 figures, 1 table and 7 references, of which 3 are Soviet, 3 German and 1 French.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Metal Physics, Ac. Sc. USSR)

SUBMITTED: March 4, 1958

S/126/63/015/003/019/025
E021/E135

AUTHORS: Volkenshteyn, N.V., and Tsiovkin, Yu.N.

TITLE: Specific heat of alloys of the system Ni - Mn in the temperature range 13 - 300 °K

PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.3, 1963, 465-467

TEXT: The authors briefly report an investigation, using a procedure described elsewhere, of the specific heat of annealed alloys with 25 and 30 atomic % Mn in the disordered state. Both continuous and powdered specimens were used. The results are shown in the figure, where Cp X 10^2 in cal/g degree is shown as a function of absolute temperature by dots and circles for continuous and powder specimens, respectively, of the 25-at.% Mn alloy, and by crosses for 30-at.% Mn powder. The Debye temperature calculated from this curve (Θ_o = 359 °K) agrees well with the theoretical value. The 110 - 120 °K region of the curve shows that the specific volume of anti-ferromagnetic phase is small. There are 1 figure and 1 table.

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Specific heat of alloys of the ... S/126/63/015/003/019/025
E021/E135

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals, AS USSR)

SUBMITTED: July 4, 1962

Card 2/3

VOLKENSHTEYN, N.V.; TSIOVKIN, Yu.N.

Investigating the kinetic curves of electric resistance in ordering alloys. Fiz. met. i metalloved. 9 no. 4:627-630 Ap '60. (MIRA 14:5)

1. Institut fiziki metallov AN SSSR.
(Alloys--Electric properties)

TSIOVKIN, Yu.N.; VOLKENSHTEYN, N.V.

Heat capacity of a 0.5% solution of Gd in platinum. Fiz. met. i metalloved. 19 no.1:133-135 Ja '65. (MIRA 18:4)

1. Institut fiziki metallov AN SSSR.

L 7969-66 EWT(m)/ETC/EWG(m)/T/EWP(t)/EWP(b) IJP(c) DS/JD/JG

ACC NR: AP5025080 SOURCE CODE: UR/0364/65/001/010/1218/1224

AUTHOR: Tsiovkina, L. A. 44,55; Smirnov, M. V. 44,55; Oleynikova, V. A. 44,55

ORG: Institute of Electrochemistry of the Ural Branch of the Academy of Sciences SSSR (Institut elektrokhimii Ural'skogo filiala Akademii nauk SSSR) 83 44,55

TITLE: Anode 1,44,55 processes on platinum 27 in the electrolysis of carbonate melts

SOURCE: Elektrokhimiya, v. 1, no. 10, 1965, 1218-1224

TOPIC TAGS: electrolytic cell, electrode, platinum, gas adsorption, oxygen, carbonate, lithium, potassium, sodium

ABSTRACT: The article is an attempt to fully explain the effect of adsorbed oxygen on the polarization of a platinum electrode. The experiments were carried out in hermetically sealed cells which made it possible to eliminate the dissolved oxygen from the carbonate melts. A melted mixture of the carbonates Li_2CO_3, K_2CO_3, and Na_2CO_3 in the ratio 3:4:3 was placed in a platinum crucible. The electrode investigated was a platinum sheet about 1 cm^2 in area. Its potential was

Card 1/2

UDC: 541.135.3

L 7969-66

ACC NR: AP5025080

measured with respect to a reference electrode which was a platinum tube through which was continuously blown a mixture of $2CO_2 + O_2$. The cell was sealed and evacuated at room temperature to a pressure of approximately 10^{-2} mm Hg, and then filled with pure carbon dioxide gas. The potential of the platinum electrode fell gradually and reached values of 0.8-0.9 volts further in the negative direction than the potential of the reference electrode. This means that the activity of the oxygen adsorbed on the platinum decreased by 10^8-10^9 times in comparison with the oxygen adsorbed on the reference electrode from the $2CO_2+O_2$ mixture. The article goes on to consider the change in the potential of a platinum electrode in a carbonate melt according to the oxygen discharged on it, and, finally, the overvoltage during the evolution of a gas mixture of $2CO_2 + O_2$ on a platinum anode during the electrolysis of carbonate melts. Results are shown in tabular and graphic form. The change in the potential with cathode polarization indicates that here there are difficulties connected with the transfer of oxygen from the gas phase to the active locations of the metallic surface on which it can ionize and pass into the solution in the form of ions. Orig. art. has: 4 figures and 2 tables

SUB CODE: GC/ SUBM DATE: 27Nov64/ ORIG REF: 006/ OTH REF: 001

Card 2/2

3940-66 EWT(m)/ETC/EWG(m)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) JD/HW

ACC NR: AT5028242 SOURCE CODE: UR/2631/65/000/006/0069/0073

AUTHOR: Smirnov, M. V.; 44,55 Tsiovkina, L. A.; 44,55 Oleynikova, V. A. 44,55

ORG: Institute of Electrochemistry, Ural Branch, Academy of Sciences SSSR (Adademiya nauk SSSR, Ural'skiy filial, Institut elektrokhimii) 44,55

TITLE: Processes occurring at a platinum and nickel cathode during electrolysis of carbonate melts 7,44,55

SOURCE: AN SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy. no. 6, 1965. Elektrokhimiya rasplavlennykh solevykh i tverdykh elektrolitov (Electrochemistry of fused salts and solid electrolytes), 69-73

TOPIC TAGS: carbonate, electrolysis, cathode polarization, platinum, nickel, carbon, carbon monoxide

ABSTRACT: The cathodic polarization of platinum (at 640C) and nickel (at 600 and 700C) was studied during the electrolysis of the ternary mixture Li_2CO_3-Na_2CO_3-K_2CO_3 (4:3:3) in the range of current densities of 10^{-4} to 1-2 A/cm^2. The products formed at the cathode were investigated. It is shown that depending upon the current density, various electrode reactions take place: at current densities below

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L 9940-66

ACC NR: AT5028242

8

10^{-3} A/cm^2, the cathode surface remains lustrous without any trace of deposition of any products; at 10^{-3} - 10^{-2} A/cm^2, a spongy deposit of finely divided carbon is formed; above 10^{-2} A/cm^2, carbon monoxide is evolved, and its volume increases with the current. Polarization has a concentration character and is associated with the migration of carbonate ions from the volume of the electrolyte to its surface. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 07 / SUBM DATE: None / OTH REF: 003

OC/

Card 2/2

SMIRNOV, M.V.; TSIOVKINA, L.A.; LOGINOV, N.A.

Oxidation-reduction potential of the system Ti^{2+}/Ti^{3+} and the equilibrium constant for the reaction $2Ti^{3+}+Ti=3Ti^{2+}$ in fused chlorides. Dokl. AN SSSR 136 no.6:1388-1391 F '61. (MIRA 14:3)

1. Institut elektrokhimii Ural'skogo filiala AN SSSR. Predstavleno akademikom A.N. Frumkinym.

(Titanium)
(Electromotive force)

S/020/61/136/006/020/024
B101/B203

AUTHORS: Smirnov, M. V., Tsiovkina, L. A., and Loginov, N. A.

TITLE: Redox potential of the system Ti^{2+}/Ti^{3+} and equilibrium constant of the reaction $2Ti^{3+} + Ti \rightleftarrows 3Ti^{2+}$ in chloride melts

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 6, 1961, 1388-1391

TEXT: For the reaction $Ti^{3}_{melt} + 0.5Ti_{solid} \rightleftarrows (3/2)Ti^{2}_{melt}$ (1) studied by several researchers, the temperature dependence of the equilibrium constant has not been clearly defined as yet. The redox potential of the system Ti^{2+}/Ti^{3+} was only studied by J. A. Menzies et al (Ref. 4). In this case, $TiCl_3$ was potentiometrically titrated with hydrogen in eutectic LiCl - KCl melt. The authors repeated this experiment at 700°C. Fig. 1 shows the curves for three experiments. They do not correspond to the equation $E = E^{0}_{Ti^{2+}/Ti^{3+}} + (RT/F)\ln([Ti^{3+}]/[Ti^{2+}])$. Hence, the authors

Card 1/5

S/020/61/136/006/020/024
B101/B203

Redox potential of the system...

conclude that in the potentiometric titration with hydrogen not $E^o_{Ti^{2+}/Ti^{3+}}$ was measured, but only the potential which corresponds to the equilibrium in the system $TiCl_{3\ melt} + 0.5H_{gas} \rightleftarrows TiCl_{2\ melt} + HCl_{gas}$. To obtain the value $E^o_{Ti^{2+}/Ti^{3+}}$, the authors conducted the potentiometric titration with metallic titanium. The initial salt solution was prepared by blowing $TiCl_4$ vapor through an equimolar mixture of NaCl and KCl. The redox potential was measured by a molybdenum electrode referred to a chlorine electrode. For a rapid balancing of the concentration of Ti^{2+} and Ti^{3+} in the melt, the molybdenum electrode rotated at 60 rpm. The potentiometric curves of Fig. 3 were obtained. Their course depends on experimental conditions (temperature, concentration, intermixture). But all of them show the typical salient point which corresponds to the redox potential $E^o_{Ti^{2+}/Ti^{3+}} = 1.726 \pm 0.005$ v (referred to chlorine electrode). On the basis of the earlier established $E^o_{Ti/Ti^{2+}} = (-2.371+6.09 \cdot 10^{-4}T)$ v,

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B101/B203

Redox potential of the system...

the authors calculate $E^{0}_{Ti/Ti^{3+}} = (-2.156+3.82\cdot10^{-4}T)$ v, and find log K = - 2.888 + 3.251/T for the equilibrium constant. The resulting K values are: 2.82 at 700°C; 1.35 at 800°C; 0.76 at 900°C; and 0.46 at 1000°C. Thus, the equilibrium of reaction (1) is displaced to the left with rising temperature. In contrast to other researchers, the authors could not establish a dependence of the redox potential on the titanium concentration. There are 3 figures, 2 tables, and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Institut elektrokhimii Ural'skogo filiala Akademii nauk SSSR (Institute of Electrochemistry of the Ural Branch of the Academy of Sciences USSR)

PRESENTED: September 5, 1960, by A. N. Frumkin, Academician

SUBMITTED: August 31, 1960

Card 3/5

S/020/61/136/006/020/024
B101/B203

Redox potential of the system....

Legend to Fig. 1: Curves of potentiometric titration for $TiCl_3$ (4% by weight) in molten equimolar mixture NaCl+KCl at 700°C, established by three experiments. a) Duration of reduction, hr; b) redox potential of the system Ti^2/Ti^3 referred to chlorine electrode.

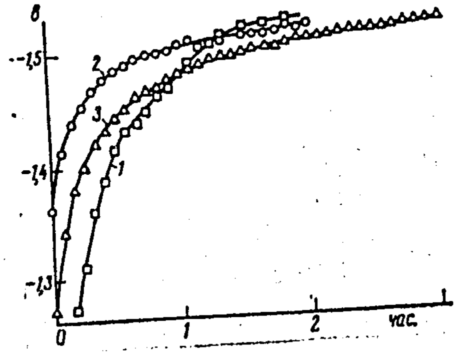

Fig. 1

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S/020/61/136/006/020/024
B101/B203

Redox potential of the system...

Legend to Fig. 3: Curves of potentiometric titration for $TiCl_3$ with metallic titanium in molten equimolar mixture NaCl KCl, established 1) at 710°C, 1.93% by weight of $TiCl_3$; 2) at 897°C, 3.93% by weight of $TiCl_3$; 3) at 824°C, 3.96% by weight of $TiCl_3$. Curve 1 was plotted with a larger surface of the reducing metal than curves 2 and 3; a) and b) as in Fig. 1.

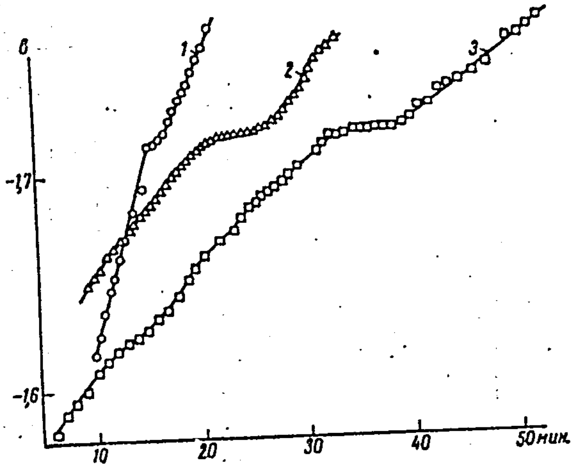

Fig. 3

Card 5/5

TSIOVKINA, L. A., Cand Chem Sci -- (diss) "Cathodic and anodic processes in the electrolysis of salt melts of various composition, containing titanium." Sverdlovsk, 1960. 9 pp; (Ural'skiy Affiliate of the Academy of Sciences USSR, Inst of Electrochemistry); 150 copies; price not given; (KL, 23-60, 122)

S/137/62/000/008/008/065
A006/A101

AUTHORS: Smirnov, M. V., Loginov, N. A., Tsiovkina, L. A.

TITLE: Behavior and equilibrium potentials of titanium in mixed fluoride-chloride melts

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1962, 21 - 22, abstract 8G160 ("Tr. In-ta elektrokhimii. Ural'skiy fil. AN SSSR", 1961, no. 2, 29 - 40)

TEXT: The authors studied interaction of Ti metal with fluoride-chloride melts containing Ti in 3- and 4-valent state. It is shown that in the presence of an excessive amount of alkali-metal fluoride, a Ti^{2+} compound is being formed whose composition is Me_2TiF_4 and which is poorly soluble in molten mixtures of alkali-metal chlorides and fluorides. It is found that the behavior of a Ti-electrode in mixed fluoride-chloride melts is like the behavior of a second-type electrode; its potential does not depend upon the nominal Ti content in the electrolyte and is wholly determined by the concentration of fluor ions $[F^-]$ in relation according to equation $E = -2.66 - 4.10 \cdot 10^{-4} T - 3.97 \cdot 10^{-4} T lg [F^-]^b$

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Card 1/2

Behavior and equilibrium potentials of...

S/137/62/000/008/008/065
A006/A101

to the comparison chlorine electrode. On the basis of experimental data an equation is obtained for the temperature dependence of the product of $MeTiF_4$ solubility in mixed fluoride-chloride melts: $L_p = [Ti^{2+}][F^-]^4$; $\lg L_p = -4.868 - 2701/T$.

G. Svodtseva

[Abstracter's note: Complete translation]

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S/631/61/000/002/004/013
I003/I203

AUTHORS: Smirnov, M. V., Loginov, N. A.Loginov, N. A., and Tsiovkina, L. A.

SOURCE: Akademiya nauk SSSR. Ural'skiy filial. Institut elektrokhimii. Trudy, no. 2, 1961, Elektrokhimiya rasplavlennykh solevykh i tverdykh elektrolitov. 29-40

TEXT: There is no explanation for the strong influence of the fluorine anion on the potentials of the cathodic deposition and the anodic dissolution of titanium in fluoride-chloride fused salts. The reactions between metallic titanium and the fluoride-chloride fused salts containing ter- and quadrivalent titanium ions were investigated. In the presence of excess alkali metal fluoride a titanium complex compound of the Me_2TiF_4 type is formed, which is only sparingly soluble in the fused salt, causes the titanium deposit on the cathode to adhere badly, and lowers the current efficiency during electrolysis. The equilibrium potentials of titanium in mixed fluoride-chloride fused salts of various compositions were also investigated and the titanium electrode was found to behave as an electrode of the second kind with a potential measured against a chlorine reference electrode. The latter does not depend on the nominal titanium content in the fused salt but only on the concentration of fluorine ions. The temperature dependence of the solubility product of compounds of the Me_2TiF_4 type in mixed fluoride-chloride salts was obtained. There are 8 figures, and 4 tables.

Card 1/1

SMIRNOV, M.V.; TSIOVKINA, L.A.

Cathodic processes in the electrolysis of fused salts containing titanium. Izv.Sib.otd.AN SSSR no.10:74-86 '59. (MIRA 13:4)

1. Ural'skiy filial AN SSSR.
(Titanium--Electrometallurgy)

TSIOVKINA, L.A.; SMIRNOV, M.V.

Effect of the nature of cations and anions on the solubility of titanium tetrachloride in fused salts. Zhur.neorg.khim. 4 no.1: 158-162 Ja '59. (MIRA 12:2)

(Titanium chlorides) (Alkali metal chlorides)
(Solubility)

SMIRNOV, M.V.; TSIOVKINA, L.A.

Anodic dissolution of titanium in molten salts. Izv.Sib.otd.
AN SSSR no.9:17-25 '58. (MIRA 11:11)
(Titanium--Electrometallurgy) (Polarization (Electricity)

5(2), 5(4)

AUTHORS: Tsiovkina, L. A., Smirnov, M. V. SOV/78-4-1-30/48

TITLE: The Influence of the Nature of Cations and Anions on the Solubility of Titanium Tetrachloride in Salt Melts (Vliyaniye prirody kationov i anionov na rastvorimost' tetrakhlorida titana v solevykh rasplavakh)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 1, pp 158-162 (USSR)

ABSTRACT: The solubility of titanium tetrachloride in melts of LiCl, KCl, CsCl, NaCl-KCl, and an equimolar mixture of NaCl-KCl with additions of 10, 15, and 20 wt.% NaF was examined at 650 - 800°. The dependence of the solubility of $TiCl_4$ on the nature of the cations in the melt shows a solubility increase in the direction from LiCl to CsCl. The solubility increase is caused by the formation of complex anions. The complex forming process is indicated by the following reactions:

$$TiCl_{4gas} + Cl^-_{melt} \rightleftarrows TiCl^-_{5melt},$$

$$TiCl^-_{5melt} + Cl^-_{melt} \rightleftarrows TiCl^{2-}_{6melt}.$$

Card 1/2

The Influence of the Nature of Cations and Anions on the Solubility of Titanium Tetrachloride in Salt Melts SOV/78-4-1-30/48

The dependence of the solubility of titanium tetrachloride in the melt of NaCl-KCl(1:1) on the temperature and the dependence of the solubility of the NaF concentration was investigated. In melts with fluorine ions the solubility of $TiCl_4$ increases with the formation of titanium fluorine complex TiF_6^{2-}. The complex ion TiF_6^{2-} has a higher temperature stability than the ion $TiCl_6^{2-}$. There are 6 figures and 13 references, 1 of which is Soviet.

SUBMITTED: October 28, 1957

Card 2/2

SMIRNOV, M.V.; TSIOVKINA, L.A.; OLEYNIKOVA, V.A.

Processes on platinum and nickel cathodes in the electrolysis
of carbonate melts. Trudy Inst. elektrokhim. UFAN SSSR no.6:
69-73 '65. (MIRA 18:11)

TSIOVKINA, L.A.; SMIRNOV, M.V.; OLEYNIKOVA, V.A.

Anodic processes on platinum in the electrolysis of carbonate melts.
Elektrokhimiia 1 no.10:1218-1224 O '65.
(MIRA 18:10)

1. Institut elektrokhimii Ural'skogo filiala AN SSSR.

TSIPARIS, I.N. [Ciparis, I.]; SMORIGAYTE, N.Yu.; [Smorigaite, N.]

Liquid-vapor equilibrium in the systems acetic acid-water and acetic acid-water-salt under isothermic 40 and 60° and isobaric conditions at 760 millimeters of the mercury column. Zhur. ob khim. 34 no.12:3867-3872 D '64 (MIRA 18:1)

1. Litovskaya sel'skokhozyaystvennaya akademiya.

TSIPARIS, I.N. [Ciparis, I.]; DZHEKCHIORYUS, L.M. [Dzerkciorius, L.];
KAPITAL'NYY, V.G.; RYBNIKOV, A.N.

Extractive rectification of raw acetic acid using sodium acetate.
Gidroliz. i lesokhim. prom. 17 no.4:16-19 '64 (MIRA 17:7)

1. Litovskaya sel'skokhozyaystvennaya akademiya (for TSiparis, Dzhekzhioryus). 2. Dmitriyevskiy lesokhimicheskiy zavod (for Kapital'nyy, Rybnikov).

TSIPARIS, I. N.

MOSCOW ORDER OF LENIN CHEMICOTECHNOLOGICAL INST IMENI D. I. MENDELEYEV

TSIPARIS, I. N. -- "INVESTIGATION OF THE PROCESS OF MASS EXCHANGE IN A LIQUID LAYER IN ABSORPTIVE PRECIPITATING COLUMNS." SUB 11 JUN 52, MOSCOW ORDER OF LENIN CHEMICOTECHNOLOGICAL INST IMENI D. I. MENDELEYEV (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

TSIPARIS, I.N.; SMORIGAYTE, N.Yu. [Smorigaite, N.]

Evaluating the effect of salting-out by electrolytes. Izv. vys. ucheb. zav.; khim. i khim. tekh. 6 no.3:405-407 '63. (MIRA 16:8)

1. Litovskaya sel'skokhozyaystvennaya akademiya, kafedra khimii.
(Salting-out) (Electrolytes)

TSIPARIS, I.N.

"Basic principles for the selection of the solvent for separation of azeotropic systems by extractive distillation" by V.V. Kafarov, L.A. Gordievskii. Reviewed by I.N. TSiparis. Zhur.prikl.khim. 29 no.8:1301-1302 Ag '56. (MIRA 10:10)

1.Kaunasskiy politekhnicheskiy institut.
(Solvents) (Azeotropy) (Distillation)
(Kafarov, V.V.) (Gordievskii, L.A.)

[illegible]

AUTHOR: None Given 3-8-21/34

TITLE: From the Editor's Mail (Iz redaktsionnoy pochty) To Unify the Dimensions of Physical Magnitudes (Unifitsirovat' razmernosti fizicheskikh velichin)

PERIODICAL: Vestnik Vysshey Shkoly, 1957, # 8, p 75 (USSR)

ABSTRACT:

The article deals with the need for a precise nomenclature for such important physical magnitudes as density, specific, relative and volumetric weight. The authors of textbooks give different interpretations to these magnitudes,and instructors have to spend much time teaching students to operate with the dimensionalities of physical quantities.

Dotsent I.N.Tsiparis, Kaunas Polytechnic Institute, (Kaunasskiy politechnicheskiy institut) considers that the Institute of Scientific Information of the USSR Academy of Sciences (Institut nauchnoy informatsii), working at present on a unification of technical terminology, should extend its work also to the unification of dimensions standards.

AVAILABLE: Library of Congress

Card 1/1

TSIPE, K. [Cipe, K.]

Utilization of labor resources on state farms of the Latvian S.S.R. Vestis Latv ak no.2:33-41 '62.

1. Institut ekonomiki AN Latviyskoy SSR.

TSIPARIS, I.N.[Ciparis, I.]; SMORIGAYTE, N.Yu.[Smorigaite, N.];
BRAZAUSKENE, D.I.[Brazauskiene, D.]

Physicochemical investigation of saturated solutions of salts in mixtures of water and carboxylic acids. Ukr. khim. zhur. 29 no.2:142-149 '63. (MIRA 16:6)

1. Litovskaya sel'skokhozyaystvennaya akademiya.
(Salts) (Solution(Chemistry))

TS

CIPE, Kalmans; GULANS, P., kand. ekon. nauk, red.; BIRZINA, L.,
kand. jur. nauk; ZUMBERGA, M., red.; LEMBERGA, A., tekhn.
red.

[Cash payment for the labor of collective farmers] Kolhoznieku darba samaksa nauda. Riga, Latvijas PSR Zinatnu Akademijas izdevnieciba, 1962. 94 p. (MIRA 16:5)
(Latvija--Agricultural wages)

TSIPEL'ZON, Em.

Kaluga booklets. Av. i kosm. 48 no.10:47-48 O '65.
(MIRA 18:11)

TSIPEL'ZON, Em.

Story of the "Czar Bell." IUn.tekh. 7 no.1:76-77 Ja '63.
(MIRA 16:5)
(Moscow—Bells)

BUDANOV, G.V., otv. za vypusk; REZNIKOV, A.I., otv. za vypusk; TSIPEL'ZON, Z.F., red.; PEVZNER, A.S., zav.red.izd-va; TEYERMAN, T.M., tekhn.red.

[Price list for equipment assembly] TSennik na montazh oborudovaniia. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam. No.16. [Equipment of enterprises of the metallurgical industry] Oborudovanie predpriiatii metallurgicheskoi promyshlennosti. Pt.3. [Equipment of rolling mills] Oborudovanie prokatnykh proizvodstv. 1958. 36 p. (MIRA 13:2)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

(Rolling mills--Equipment and supplies)

OVECHKIS, YE.S., KRAVCHENKO, A.D., GRAD, N.YE., IRLINSKIY, D.A., TSIFFNYUK, A.YA.

Hides and Skins

Efficient method for measuring stiff hides. Leg. prom. 12 no. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

[illegible], [illegible], [illegible], [illegible], [illegible], D.A., [illegible]

Hides and Skins

Efficient method for measuring still hides. Leg. prom 12 no. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED

OVECHKIS, Ye.S.; TSIPENYUK, A.Ya.

Device for determining footwear elasticity. Kozh.-obuv.prom. 5 no.5:26-29 My '63. (MIRA 16:5)

(Boots and shoes—Testing)

OVECHKIS, [illegible]

Hides and Skins

Efficient method for measuring stiff hides. Leg. prom. 12 no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 195~~3~~2, Uncl.

OVECHKIS, Ye.S., kand. tekhn. nauk; TSIPENYUK, A.Ya., inzh.

Weight norms for footwear. Kozh.-obuv. prom. 6 no.5:34-37 My '64. (MIRA 17:12)

CHUYKO, Ye.A.; BLOKH, G.A.; OVCHARENKO, F.D.; GUDOVICH, N.V.; TSIPENYUK, E.V.

Activation of kaolin with the cation-active substance "alkamon OS-2." Kozh.-obuv. prom. 6 no.9:13-16 S '64.

(MIRA 17:12)

TSIPENYUK, I.F., inzh.

Durability of the reinforced-concrete structures of metallurgical plants. Prom.stroi. 42 no.2:30-33 '65.

(MIRA 18:4)

1. Ural'skiy nauchno-issledovatel'skiy institut betona i zhelezobetona.

RYABCHICH, V.F.; TSIPENYUK, I.F.; VAKHIDOV, D.N.

The problem of the durability of the reinforced concrete elements of foundry buildings. Prom. stroi. 40 no.9:40-44 '62. (MIRA 15:11)

1. Ural'skiy filial Akademii stroitel'stva i arkhitektury SSSR.

(Foundries)
(Reinforced concrete)

RYABCHICH, V.F., inzh.; TSIPENYUK, I.F., inzh.

Constructing and maintaining the roofing of a large sheet-rolling mill. Prom. stroi. 40 no.8:22-27 Ag '63. (MIRA 16:8)

1. Ural'skiy filial Akademii stroitel'stva i arkhitektury SSSR.
(Roofing, Concrete--Defects) (Rolling mills)

TSIPENYUK KH. YA

OVECHKIS, Ye.S., kandidat tekhnicheskikh nauk; TSIPENYUK, Kh.Ya., inzhener.

Durable attachment of heels to shoes. Leg.prom. 14 no.9:17-18 S '54. (MLRA 7:9)

(Shoe industry)

TSIPENYUK, L.M., dotsent

Surgical procedure in removing a magnetic fragment from the crystalline lens. Zdrav. Kazakh. 21 no.5:27-30 '61. (MIRA 15:2)

1. Iz kliniki glaznykh bolezney (zav. - prof. V.P.Roshchin) Kazakhskogo meditsinskogo instituta.
(CRYSTALLINE LENS—FOREIGN BODIES)

TSIPENYUK, L.M., dotsent

Prevention of purulent complications following the extraction of a senile cataract. Zdrav. Kazakh. 22 no.8:28-31 '62
(MIRA 17:4)

1. Iz kafedry glaznykh bolezney (zav. - prof. V.P. Roshchin) Kazakhskogo meditsinskogo instituta.

TSIPENYUK, L.M., dotsent

Ocular lesions in the Stevens-Johnson syndrome. Vest.oft.
no.4:45-47 '62. (MIRA 15:11)

1. Kafedra glaznykh bolezney (zav. - zasluzhennyy deyatel'
nauki prof. V.P. Roshchin) Kazakhskogo meditsinskogo instituta.
(ERYTHEMA) (EYE--DISEASES AND DEFECTS)

TSIPENYUK, L.M.

25987 Tsipenyuk, L.M. Nekotorye itogi Desyatiletnego Opyta Kliniki Glaznykh Bolezney KazMI V Oblasti Peresadki Rogovitsy V Ogl: L.M. Tsepenyuk(!). Zdravookhranenke Kazakhstana, 1948, No. 4, S. 19-24.

SO: Letopis' Zhurnal Statey, No. 30, Moscow 1948

TSIPENYUK, L. M.

Tsipenyuk, L. M. "Panicillin therapy of orbital phlegmon
and its complications," Zdravookhraneniye Kazakhstana,
1949, No. 1, p. 25-26.

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No. 17, 1949).

PATRIN, P.A.; inzh.; KISHENEV, V.F.; TSIPENYUK, M.I., inzh.;
VOZNESENSKIY, A.A., kand.tekhn.nauk; SEDOV, V.G.,
IUR'YE, M.S.; STEPANENKO, M.G., prof.

Over-all mechanization and automatization of the heat treatment of ceramic stones (comment on M.I. Rogovyi's and D.O. Konovalov's article). Stroi. mat. 6 no.3:25-27 Mr '60. (MIRA 13:6)

1. Severo-Kavkazskaya nauchno-issledovatel'skaya stantsiya po stroitel'stvu i stroitel'nym materialam (for Patrin). 2. Zaveduyushchiy laboratoriyey tresta karagandastroymaterialy (for Kishenev). 3. Ukrgiprostroymaterialy (for TSipenok). 4. Zaveduyushchiy kafedroy energeticheskogo oborudovaniya i avtomatiki Rostovskogo inzhenerno-stroitel'nogo instituta (for Voznesenskiy). 5. Glavnyy inzhener instituta Rosstromoproyekt (for Sedov). 6. Glavnyy teplotekhnik instituta Rosstromproyekt (for Iur'ye).
(Kilns) (Automatic control)

TSIPENYUK, M.Kh; TSIPENYUK, Yu.Ye.

Methods of purifying waste gases in the production of phthalic anhydride. Gig. i san. 28 No.1: 66-68 Ja'63. (MIRA 16:7)

1. Iz Rubezhanskogo filiala Nauchno-issledovatel'skogo instituta organicheskikh poluproduktov i krasiteley.
(INDUSTRIAL HYGIENE) (GASES—PURIFICATION)

TSIPENYUK, M.Kh. [TSypeniuk, M.Kh.]; MAZIN, V.A.; SKRYLEV, V.B. [Skryl'ov, V.B.]

Use of the naphthalene fraction in the production of phthalic anhydride. Khim. prom. no.4:12-13 O-D '64. (MIRA 18:3)

L 2343-66 EWT(m)/EWA(h)

ACCESSION NR: AT5022126 UR/3158/65/000/001/0001/0007

33

24

B+1

AUTHORS: Soldatov, A. S.; Smirenkin, G. N.; Kapitsa, S. P.; Tsipenyuk, M. Yu.

TITLE: Fission 19 of uranium-238 by quadrupole absorption of gamma-quanta

SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, no. 1, 1965. Deleniye urana-238 pri kvadrupol'nom pogloshchenii gamma-kvantov, 1-7

TOPIC TAGS: uranium, fission product, fission, gamma ray, bremsstrahlung

ABSTRACT: The angular distribution of fission fragments during the photofission of U^{238} under $F^{19}(\rho,\alpha,\gamma)O^{16}$ gamma-quanta reaction and electron bremsstrahlung radiation was measured. The apparatus used for measuring this angular distribution is given schematically in Fig. 1 on the Enclosure. The two U^{238} layers are of thickness 1 mg/cm^2. All the data were reduced, using mean square fit curves, and the angular distribution of the fragments was expressed by

$$W(\theta) = a + b \sin^2\theta + c \sin^2 2\theta.$$

The gamma-ray source was a thick CaF_2 crystal target irradiated by 1.45 Mev protons. The angular distribution results were plotted on a graph next to the data of B. Forkman and S. A. E. Johansson (Nucl. Phys. 20, 136, 1960). The present curve was

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ACCESSION NR: AT5022126

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found to lie consistently below the one given by Forkman and Johansson because of the large quadrupole component in the total fission cross section in the region of 6 to 7 Mev. The gamma-ray electron bremsstrahlung radiation experiments were done in the 12 Mev microtron at the Physical Problem Institute, AN SSSR. The target was a tungsten disk of 1 mm thickness behind which was placed the apparatus for angular distribution measurement. The results were plotted graphically as the ratios $a/_b$, $c/_b$ versus $E_m (5 \le E_m \le 10)$. The magnitude of $a/_b$ throughout these experiments lay systematically below similar data reported by other authors, probably because of a difference in target thickness. "The authors are deeply grateful to L. N. Usachev and N. S. Rabotnov for helping in the work, to P. L. Kapitsa for supporting the work, to V. P. Porelygin and S. P. Tret'yakova for acquainting us with the fission fragment recording technique, and to M. K. Golubeva, L. D. Gordeyeva and N. Ye. Federova for taking part in the tests." Orig. art. has: 4 figures and 1 equation.

ASSOCIATION: Fiziko-energeticheskiy institut, Obninsk (Physico-Power Institute, Obninsk); Institut fizicheskikh problem, AN SSSR (Institute of Physical Problems, AN SSSR)

SUBMITTED: 00 ENCL: 01 SUB CODE: NP
NO REF SOV: 006 OTHER: 008
Card 2/3

L 2343-66

ACCESSION NR: AT5022126

ENCLOSURE: 01

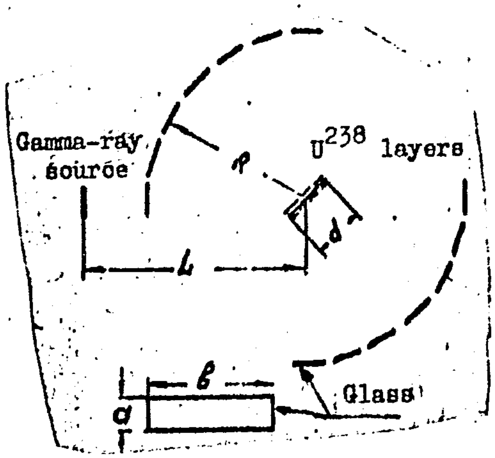

Fig. 1.

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BOCHAROVA, I.Ye.; ZOLOTUKHIN, V.G.; KAPITSA, S.P.; SMIRENKIN, G.N.;
SOLDATOV, A.S.; TSIPENYUK, Yu.M.

Angular distribution of fragments near the threshold of U^{238} photofission. Zhur. eksp. i teor. fiz. 49 no.2:476-484 Ag '65. (MIRA 18:9)

1. Institut fizicheskikh problem AN SSSR.

21915

S/125/60/000/011/010/016
A161/A133

1.2300

AUTHORS: Salimon, V.S., Tsipenyuk, Ya.I., Batyrev, A.V., Sabanov, A.G.

TITLE: Universal automatic gas-electric welding assembly for annular seams on small-diameter tubes

/3

PERIODICAL: Avtomaticheskaya svarka, no. 11, 1960, 57-61

1

TEXT: Automatic annular seam welders of existing designs of the Electric Welding Institute im.Ye.O.Paton (Ref.1-4) and others (Ref.5) can only be used for parts similar in shape and not too different in size. The described new unit developed by SNIITMASh permits the welding of parts of different dimensions in vertical and horizontal position. It can weld annular seams on tubes 20 to 100 mm in diameter and 200 to 13,000 mm length (on roller supports), join flanges by unilateral or bilateral inside and outside welding to tubes 20-100 mm in diameter and up to 13,000 mm length, weld annular seams on workpieces up to 300 mm in diameter and up to 300 mm height, with flange diameters up to 500 mm (on a separate table). The machine (Fig.1) consists of a frame (1), control panel (2), floating pneumatic clamping device on roller

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A161/A133

Universal automatic gas-electric welding...

supports (3) a current conductor to the workpiece (4) on roller supports; a welding head with a hose, torch and adapter (5), table (6), duplicating push button panel (7), electric drive (8) for rotating the workpiece; and stationary (9) and mobile (10) roller supports. Components of the standard АДС-1000-2 (ADS-1000-2) motor welder are used for the welding wire feed drive and the workpiece rotation drive. The component parts of the assembly are shown in figure 2. When welding is done on roller supports, the workpiece is installed in horizontal position. Butt joints on tubes are made using the stationary (2) and the mobile (4) roller support. Flanges are joined to tubes of up to 500 mm length on the stationary support. All support rollers are driven; the rotation is transmitted to the mobile support through spline shafts (5). A gantry moving on rollers is provided for the welding of parts longer than 1300 mm, designed to support the overhanging tube ends. The welding speed on the supports is adjusted smoothly within a range of 10-115 m/hr. The floating clamping device with rollers (7) is actuated by air cylinder (20); holding is possible by one roller only, or by two. The clamping mechanism consist of double-action cylinder (20) connected to valve (1); shaft (16) on brackets (18); shaft (6) joined with shaft (16) by crosspiece (14) and passing through holes in levers (8). Shaft (6) can swivel and be

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A161/A133

Universal automatic gas-electric welding...

fixed by a cotter (15). Levers (8) and crosspiece (14) can travel along the machine on shaft (16) and fixed. The clamping device is actuated by turning handle (23) on the air valve. Torch (9) is positioned with the aid of hinges (10) and (12) and by turning the welding head around the vertical axle (17). The torch is connected to welding head (13) the hose (11). The welding wire feed is independent from the arc voltage and can be adjusted between 50 and 440 m/hr. Current is supplied to the workpiece by an automatic contact of copper-graphite brushes (19). The quickly detachable table (21) is provided for welding short angular joints. The workpiece is clamped with a three-jaw chuck or with special devices; the welding speed is adjustable between 45 and 610 rpm. The control buttons are duplicated and placed outside on a separate panel (22) for convenience. The welding angle is completely automated, and the operator has only to press the "start" button. A "E 52" (E-52) time relay works automatically. The unit is equipped additionally with a d.c. generator ЗП 7,5/50 (ZP-7.5/30) with rigid or slightly raising volt-ampere characteristic; a balloon with carbon dioxide, a reducer, and a heater for carbon dioxide. Welding is effected with inverse polarity; electrode throat 10-14 mm; CO_2 consumption 13-17 liters/min. Welding current of 160-220 amp and 20-24 volt, and welding speed of 28-33 m/hr is used

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X

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Universal automatic gas-electric welding...

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in welding tubes with 3÷6 mm wall with 1.2 mm wire. Smaller wire diameter may also be used. The process changes only slightly for attaching flanges to the same tubes. Welding flanges to tubes with 3÷6 mm wall with 0.8 and 1.0 mm wire is difficult and not recommended. For welding butt joints on tubes the torch is displaced 4-8 mm off the top of the workpiece to the side opposite to the rotation sense, and set at a 10-20° angle to the vertical. The gap between tube butts is 1-1.5 mm. For the joining of flanges the torch is placed at 40-60° angle to the vertical and moved on the flange (1 mm from the tube). The process is stable, with little splatter and good weld shape. The unit is suitable for lot production of an extensive nomenclature and small series of parts being welded, e.g. for drilling equipment. There are 5 figures and 5 Soviet references.

ASSOCIATION: Stalingradskiy nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya (Stalingrad Scientific Research Institute of Mechanical Engineering Technology)

SUBMITTED: May 5, 1960

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Universal automatic gas-electric welding...

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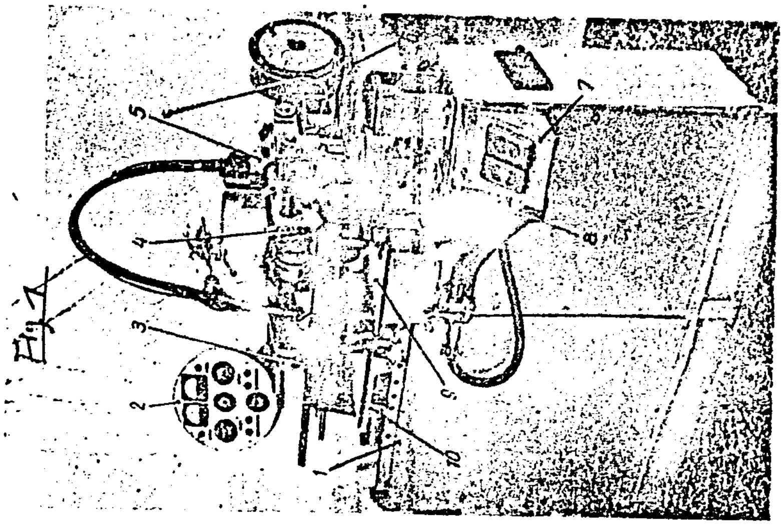
A133/A133

Figure 1



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A161/A133

Universal automatic gas-electric welding...

Fig. 2

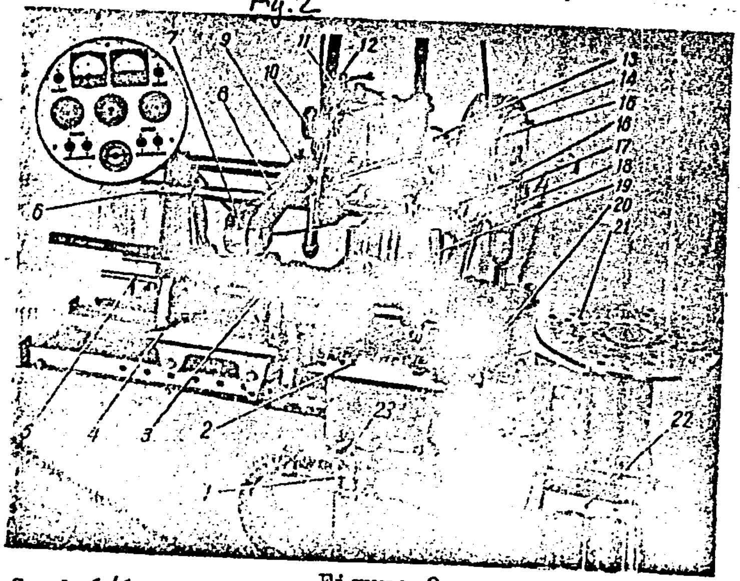

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Figure 2

Цыпенюк, Е. В.

U S S R .

10957* Penetration of High Polymer Solutions Into Rubber and Leather. **Proniknovenie rastvorov vysokopolimerov v rezinu i kozhu.** (Russian.) G. A. Blokh, S. B. Kalika, G. I. Laevskaia, E. Ia. Reznichenko, and E. V. Tsipeniuk. *Legkaia Promyshlennost'*, v. 15, no. 4, Apr. 1955, p. 40-42.

Depth of penetration of rubber cement tested, using radioactive sulfur. Diagrams.

80599

S/138/60/000/01/07/010

15.9000

AUTHORS: Zhurko, V.A., Livyy, G.V., Landa, I.M., Tsipenyuk, E.V.

TITLE: Investigation in the Field of Development of Formulae and Production Technology of Microporous Rubbers Based on Combined Polymers

PERIODICAL: Kauchuk i Rezina, 1960, No. 1, pp. 41 - 47

TEXT: Grafted and block polymers are used in many branches of the industry. In the production of these materials oxygen of the air must be prevented from reacting with the active centers. The combination of rubbers with synthetic resins was studied which was carried out with the aim of reducing the specific gravity and increasing the hardness and wear-resistance of the rubbers. Emulsion polystyrene of the TU 1827-51 type was used as the principal masticator. Polystyrene can be combined with rubber in a uniform way only if it is converted into the viscous-fluid state. The temperature for this conversion was determined on a special device measuring the deformation of the material to be tested. A diagram of the device is given. The temperature mentioned is 140°C for polystyrene of B type and also for SKS-30 rubber. Rubber can be combined with polystyrene by means of rollers or by rubber mixers of the "Werner Pfleiderer", or DK-14 1/2 types. The

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Investigation in the Field of Development of Formulae and Production Technology of Microporous Rubbers Based on Combined Polymers

fractional composition of polystyrene has a great effect on the condition of combination. If the residue on a 02-918 screen is 50%, the preparation of the master batch lasts 25 min, if it is only 35% the duration decreases to 15 min. The conditions for combining rubber and polystyrene depend on the dispersion of the latter and the temperature of its transition into the viscous-fluid state. Free access of oxygen during processing of the master batch reduces the resistance, the specific elongation and the hardness of the vulcanized batches. The optimum polystyrene dose for mixtures containing 50% of rubber is 20-30 weight parts per 100 weight parts of rubber. The low content of fillers (12-13% based on the mixture) in light rubbers makes their calendering difficult. Butadiene-styrene rubber is introduced, therefore, with natural rubber. The optimum ratio for this purpose is 30% SKS-30 and 20% natural rubber, if the total rubber content in the mixture is 50%. For ensuring a specific elongation of 220-240%, the plasticity of the rubbers used must be kept at 0.30-0.40 for SKS-30 and at 0.40-0.45 for natural rubber. The total amount of softeners (colophony and vaseline) is 6-8% based on the mixture. Rubbers of the "progress" type contain a large dose of pore-forming agent; the

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Investigation in the Field of Development of Formulae and Production Technology o
Microporous Rubbers Based on Combined Polymers

porophore ChKhZ-5 (up to 5% based on the mixture). The porophore can cause scorching of the rubber. A uniform and fine porosity increases the service time of the rubber products. Good results were also obtained with SKS-40D rubber and SBS-85 resin. There are 4 tables, 10 graphs, 1 diagram and 15 references: 13 Soviet, 1 English and 1 French.

ASSOCIATION: Kiyevskiy regeneratno-rezinovyy zavod (Kiyev Reclaimed Rubber Plant)

Card 3/3

LANDA, I.M., inzh.; TSIPENYUK, E.V., inzh.; LIVYY, G.V., kand.tekhn.nauk;
BRONSHTEYN, F.V., inzh.

Studying the use of polystyrene of various makes in sole rubber manufacture. Izv.vys.ucheb.zav.; tekh.leg.prom. no.6:33-41 '60.
(MIRA 14:1)

1. Kiyevskiy regeneratno-rezinovyy zavod (for Landa & TSipenyuk).
2. Ukrainskiy nauchno-issledovatel'skiy institut kozhevenno-obuvnoy promyshlennosti (for Livyy & Bronshteyn). Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

(Rubber, Synthetic) (Styrene)

BLOKH, G. A.; ZHURKO, V. A.; TSIPENYUK, E. V.; BELOUSOVA, E. A.; MELESHEVICH, A. P.; VAS'KOVSKAYA, M. A.

Radiation vulcanization of rubber compounds for soles. Kozh. obuv. prom. 5 no. 12:18-22 D '63. (MIRa 17:5)

S/081/63/000/004/050/051
B156/B180

AUTHORS: Livyy, G. V., Landa, I., M., Tsipenyuk, E. V., Bronshteyn, P.V.

TITLE: Research in the development of formulas and production technologies for microporous resins based on copolymers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 650, abstract 4T365 (Nauchno-issled. tr. Ukr. n.-i. in-t kozh.-obuvn. promsti, sb. 12, 1960, 201 - 219)

TEXT: Temperature versus mechanical properties curves were plotted for СКС-30 (SKS-30) and polystyrene (I) to find the temperatures at which both components enter the viscous-fluid state required for their combination (140-160°C). In practice the operation is performed on heated rollers (30 min), but it is better to use a rubber mixer with increased friction (1:1.4) with gradual introduction of I to the rubber, at a ratio of 1:1÷1.2. With smaller amounts of I the mechanical action is less vigorous as particles of I become coated with rubber. If temperature and time are increased cross-linking results, and T_f for the mother mixture to be produced is raised. Concentrated mother mixtures must be diluted with fresh SKS-30 to

Card 1/2

Research in the development of ...

S/081/63/000/004/050/051
B156/B180

give the required plasticity. The conditions of combination depend on the molecular weight of the I, which falls as its dispersion rises due to degradation during reduction. The optimum I addition, for porous resins to be used at low temperatures is 20 - 30 parts by weight to 100 parts by weight SKS-30, with the mixture containing 50 % rubber. Calendering, which is hampered by the small amount of fillers (12 - 13 %) is improved by partially replacing the SKS-30 by NK (30 % SKS-30, 20 % NK). For elongation of 220 - 240 % the plasticity of the SKS-30 must be 0.50 - 0.40 and that of the NK 0.45 - 0.40, when the mixture contains 6 - 8 % of plasticizers. If a paste consisting of ЧХЗ-5 (ChKhZ-5) and a slumy of Na bicarbonate with melted vaseline and oleic acid is used, there is less scorching of the mixture, and vulcanizing for 12 - 14 min at 165°C gives fine uniform porosity. In addition to I, good results were obtained from mixtures with СБС-85 (SBS-85) resin and SKS-40D rubber; SKS-50 gave poor results. A continuous production process for porous resins with spec.g's. of 0.3 - 0.4 has been developed on the basis of this research. [Abstracter's note: Complete translation.]

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ZHURKO, V.A.; LIVYY, G.V.; LANDA, I.M.; TSIPENYUK, E.V.

Studying the formulation, compounding, and production technology of microporous rubbers based on compatible polymers. Kauch.i rez. 19 no.1:41-47 Ja '60.
(MIRA 13:5)

1. Kiyevskiy regeneratno-rezinovyy zavod.
(Rubber) (Polymers)

S/079/62/032/009/003/011
1048/1242

AUTHORS: Blokh, G.A., Shilo, R.Ya, Tsipenyuk, E.V., and Yeroshkina, Ye.A.

TITLE: The effect of bensoic acid, phtalic anhydride, and maleic anhydride on the isotopic exchange of sulfur atoms

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 9, 1962, 2800-2803

TEXT: The rate of isotopic exchange of S atoms between S and 2-mercaptobenzothiazole in the system 2-mercaptobenzothiazole - radioactive S - diphenylguanidine (1 : 2 : 1) was studied either in the presence or in the absence of benzoic acid, phtalic anhydride, or maleic anhydride, in an attempt to determine the relationship between the anti-scorching effect of the above acids and anhydrides in the vulcanization of rubber and the rate of exchange of S atoms between the elemental S and some S-containing accelerators used in the process. The experiments were carried out at 125 or 145°C; the activity of the 2-mercaptobenzothiazole was measured after 30-180

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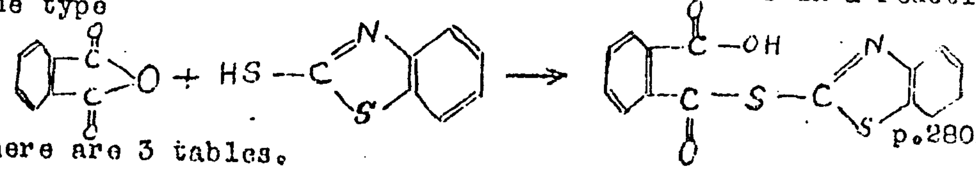
S/079/62/032/009/003/011
I048/I242

The effect of benzoic acid...

min from the start of the reaction by counting the soft- radiation — in an end-window counter. At 125°C the rate of exchange in the presence of the organic acids (or anhydrides) was much slower than in their absence; in some cases, e.g., in the 120-min experiments with phtalic anhydride, the fraction of S-atoms exchanged in the absence of the anhydride was twice as large as that exchanged in its presence. The antiscorching effect of the above acids is attributed to their interaction with the 2-mercaptobenzothiazole to form compounds with a less easily exchangeable form of S in a reaction of the type



p.2802

There are 3 tables.

ASSOCIATION: Dnepropetrovskiy khimiko-tekhnologicheskiy institut (The Dnepropetrovsk Institute of Chemical Technolo

SUBMITTED: August 7, 1961

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Tsipenyuk, E. V.

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S/081/63/000/004/049/051
B156/B180

AUTHORS: Blokh, G. A., Zhurko, V. A., Zayonchkovskiy, A. D., Kiriyenko, N. V., Karpov, V. L., Breger, A. Kh., Tsipenyuk, E. V., Vyazankina, M. A., Bronshteyn, F. V., Bernshteyn, M. Kh., Yabko, Ya. M.

TITLE: The radiation vulcanization of rubbers and reclaimed rubbers together with plastics

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 648 - 649, abstract 4T349 (Kozhevenno-obuvn. prom-st', no. 5, 1962, 17 - 20)

TEXT: The effects of exposure to radiation were studied on the physical, mechanical and chemical properties of the following combined systems of polymers: rubber СКС-30 (SKS-30), СКБ (SKB), НК (NK) - thermoplastics (low and high)molecular-weight polyethylene, and polystyrene); ratios of thermoplastics to rubber of 0 - 100 % were used. The radiation dose (Co^{60}) was 1 - 100 Mrad. The plasticity, hardness, wear-resistance, strength, percentage, elongation, permanent set etc. were determined, and

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The radiation vulcanization of ... S/081/63/000/004/049/051
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plotted versus temperature in the 40 - 200°C range. The effect of irradiation on mixtures of rubbers with polyethylene or polystyrene is that cross-linking occurs between the two polymers, to form substances with valuable physical and mechanical properties: the plasticity is greatly reduced, while the strength, wear-resistance and heat-resistance are improved. Abstracter's note: Complete translation.

Card 2/2

BLOKH, G.A.; SHILO, R.Ya.; TSIPENYUK, E.V.; YEROSHKINA, Ye.A.

Effect of benzoic acid, phthalic and maleic anhydrides on the isotope exchange of sulfur atoms. Zhur.ob.khim. 32 no.9:2800-2803 S '62. (MIRA 15:9)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.
(Sulfur—Isotopes) (Benzoic acid) (Phthalic anhydride)
(Maleic anhydride)

L 13537-63 EWP(j)/EWT(m)/BDS AFFTC/ASD Pc-4 RM
ACCESSION NR: AP3003287 S/0138/63/000/006/0010/0013 63
60

AUTHOR: Dinzburg, B. N.; Safray, B. A.; Tsipenyuk, E. V.; Zhurko, V. A.

TITLE: Modification of rubbers by thermoreactive rubber-resin master batches

SOURCE: Kauchuk i rezina, no. 6, 1963, 10-13 22 1

TOPIC TAGS: thermoreactive phenolic resin, modification of rubber, rubber-resin master batche, bakelite resin

ABSTRACT: A method was developed to reinforce nonpolar rubbers by the incorporation of comminuted bakelite resin into a film of rubber on heated rollers, beginning at 40-60C and ending at over 140C. When the mixture was compounded of 100 parts rubber, 30 parts bakelite, and 30 parts powdered silica gel, the optimal duration of the process was 10-25 minutes. The resulting product is a solid nonsticky mass which can be handled like ordinary rubber and can be used for various kinds of rubber compounds. It keeps for several days but must be reworked if used after prolonged storage. The most effective bakelite type resin

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ACCESSION NR: AP3003287

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is the one containing an imino group. The new varnish resins are effective irrespective of composition, providing hexamethylenetetramine was used as the polymerizing agent. The obtained master batches produced colored vulcanizates with satisfactory strength, as well as higher elasticity and resistance to freezing. Orig art. has: 1 picture, 2 charts, and 1 table.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut plenochny*kh mater'yalov i iskusstvennoy kozhi. Kiyevskiy regeneratno-rezinovy*y zavod (All-Union Scientific Research Institute of Layered Materials and Artificial Leather. Kiev Rubber-Reclamation Plant)

SUBMITTED: 00 DATE ACQ: 10Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 006 OTHER: 000

Card 2/2

TSIPENIUK, E.V.

AID Nr. 980-17 31 May

EFFECT OF IONIZING RADIATION ON THE STRUCTURAL CHANGES IN RUBBER-PLASTIC SYSTEMS (USSR)

Blokh, G. A., V. A. Zhurko, M. A. Vyazankina, M. A. Vas'kovskaya, A. P. Meleshevich, F. V. Bronshteyn, and E. V. Tsipenyuk. Vysokomolekulyarnyye soyedineniya, v. 5, no. 4, Apr 1963, 605-613.

S/190/63/005/004/019/020

Structural changes produced by ionizing radiation in doses of 1 to 100 Mr in rubber-plastic systems have been studied at the Dnepropetrovsk Institute of Chemical Technology. The changes in properties were evaluated from thermomechanical curves in the range from about 60 to 220°C and from swelling data. The experiments were conducted with systems of sodium butadiene (CKB), butadiene-styrene (CKC-30), or natural rubber and low- or high-pressure polyethylene or polystyrene (rubber:plastic ratios, 80:20, 50:50, and 20:80) irradiated in air without heating. The thermomechanical curves of individual nonirradiated and irradiated systems differ sharply from one another.

Card 1/2

AID Nr. 980-17 31 May

EFFECT OF IONIZING RADIATION [Cont'd] S/190/63/005/004/019/020

At a given temperature and radiation dose, network structure formation, indicated by a loss of deformability and by the absence of viscous flow, was shown to be induced by irradiation. The density of cross links in individual systems, determined by Flory's swelling method, was shown to increase with an increase of the dose and to depend on the nature of the rubber and the rubber-to-plastic ratio. In polymers containing phenyl groups radiation-induced structural changes proceeded slower and required higher radiation doses. Analysis of the results of the study indicates that ionizing radiation apparently causes a covulcanization of the rubber and the plastic and is accompanied by a change in the physical and mechanical properties of the system: a sharp decrease in plasticity, a decrease in swelling, and increases in hardness, tensile strength, and wear resistance. It is concluded that irradiation of combinations of rubbers and plastics in predetermined ratios makes possible the production of materials with the desired improved properties. [BAO]

Card 2/2

L 00733-67 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6024846 (A) SOURCE CODE: UR/0073/66/032/004/0371/0377

AUTHOR: Chuyko, A. A.; Pavlik, G. Ye.; Tertykh, V. A.; Chuyko, Ye. A.; Artemov, V. A.; Neymark, I. Ye.; Tsipenyuk, E. V.

ORG: Institute of Physical Chemistry, AN UkrSSR (Institut fizicheskoy khimii AN UkrSSR) 43 8

TITLE: Carboxylorganosilicas - chemically active fillers 15 for polymers. Report No. 1. Synthesis and adsorption properties of carboxylorganosilicas, and their use in the reinforcement of vinylpyridine rubber 17

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 32, no. 4, 1966, 371-377

TOPIC TAGS: silica, graft copolymer, synthetic rubber, filler

ABSTRACT: Carboxyl derivatives of SiO_2 were synthesized by copolymerization of methacrylic acid with vinyl silicas having various quantities of grafted vinyl groups on their surface. IR spectroscopic and ion exchange methods confirmed the grafting of methacrylic acid to the surface of vinyl silica. A study of the surface characteristics showed that methanol, diethylamine, and pyridine are chemisorbed on the acid functional groups of the carboxylorganosilicas, forming the corresponding surface compounds. Filling of a vinylpyridine polymer (SKMVP-15) with carboxylorganosilicas caused a reinforcement of the polymer system, probably because of a chemical interaction between the carboxyl groups of the filler and the basic pyridine groups of the rubber macromol-

Card 1/2 UDC: 541.182.23